



## Infographic: Developmental Coordination Disorder (part I) – characteristics, diagnosis, and consequences

MARCELA C. FERRACIOLI-GAMA<sup>1</sup> | PRISCILA TAMPLAIN<sup>2</sup>

<sup>1</sup> Institute of Physical Education and Sports, Federal University of Ceara (UFC), Fortaleza, CE, Brazil.

<sup>2</sup> Department of Kinesiology, University of Texas at Arlington (UTA), Arlington, Texas, United States of America.

Correspondence to: Priscila Tamplain. Department of Kinesiology, University of Texas at Arlington (UTA), Arlington, Texas, United States of America.

email: [priscila.tamplain@uta.edu](mailto:priscila.tamplain@uta.edu)

<https://doi.org/10.20338/bjmb.v17i4.349>

### ABBREVIATIONS

DCD Developmental Coordination Disorder

Access infographic in <https://socibracom.com/bjmb/index.php/bjmb/article/view/349/version/383>.

### PUBLICATION DATA

Received 26 01 2023

Accepted 01 02 2023

Published 20 06 2023

**KEYWORDS:** Developmental Coordination Disorder | Motor skills | Motor development | Characteristics | Diagnosis | Consequences

## INTRODUCTION

Developmental Coordination Disorder (DCD) is a common neurodevelopmental disorder characterized by motor coordination difficulties that affect academic achievement and everyday activities<sup>1</sup>, and clearly outlined in the DSM-5<sup>1</sup> and ICD-10<sup>2</sup>. The prevalence of children with DCD is 2-20%, with 5-6% being the most prevalent rate in the literature<sup>3</sup>. Common co-occurring disorders are attention-deficit hyperactivity disorder, autism spectrum disorder, dyslexia, learning disabilities, and language impairments<sup>4</sup>. The goal of this infographic is to provide an overview of the main characteristics of DCD, diagnosis, and consequences in children's lives.

The movements of children with DCD are often described as “clumsy” and “uncoordinated,” and frequently lead to performance difficulties in activities of daily living and sports that typically developing children perform easily. Those general complications can be observed when children with DCD attempt to plan a motor task, organize movements, perform a coordinated action, and adjust movements when demands change, such as moving fast to catch a ball. More specifically, children with DCD may bump into, knock things over, spill, have difficulty learning how to ride a bike, catch a ball, use a knife and fork, tie their shoes, cut with scissors, handwrite, jump, and exhibit poor balance<sup>5</sup>.

The diagnosis of DCD requires the assessment of four criteria<sup>1</sup>. Criterion A: The acquisition and execution of coordinated motor skills is substantially below that expected given the individual's chronological age and opportunity for skill learning and use; Criterion B: The motor skills deficit significantly and persistently interferes with activities of daily living appropriate to chronological age and affects academic productivity, prevocational and vocational activities, leisure and play; Criterion C: onset of symptoms in the early developmental period; and Criterion D: The motor skill deficits are not better explained by intellectual disability (intellectual developmental disorder) or visual impairment and are not attributable to a neurologic condition affecting movement (e.g., cerebral palsy, muscular dystrophy, degenerative disorder).

Although the scientific literature on DCD has advanced in the last decades, there is still little knowledge and awareness by health and educational professionals<sup>4</sup>. Children with DCD do not outgrow the disorder, and DCD impacts different domains, such as physical (e.g., lower levels of physical fitness) and psychological (e.g., anxiety, depression, lower self-concept)<sup>3</sup>. The consequences of DCD have been associated with reduced participation, especially in physical activity and social participation<sup>3</sup>. Not surprisingly, it is now accepted that children with DCD have an increased risk for mental health difficulties.

## REFERENCES

1. American Psychiatric Association, editors. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington: American Psychiatric Association; 2013.
2. Center for Disease Control and prevention. International Classification of Diseases, 10th ed. (ICD-10). Available from: <https://www.cdc.gov/nchs/icd/icd10cm.htm>.
3. Blank R, Barnett AL, Cairney J, Green D, Kirby A, Polatajko H, et al. International clinical practice recommendations on the definition, diagnosis, assessment, intervention, and psychosocial aspects of developmental coordination disorder. *Dev Med Child Neurol*. 2019;61(3):242-85. doi: 10.1111/dmcn.14132.
4. Caçola P, Lage G. Developmental Coordination Disorder (DCD): An overview of the condition and research evidence. *Motriz: Rev Educ Fis*. 2019;25(2):e101923. doi: 10.1590/S1980-6574201900020001.
5. Missiuna C, Ont OR. *Children with developmental coordination disorder: At home and in the classroom*. CanChild Centre for Childhood Disability Research; 1999.

**Citation:** Ferracioli-Gama MC, Tamplain P. (2023). Infographic: Developmental Coordination Disorder (part I) – characteristics, diagnosis, and consequences. *Brazilian Journal of Motor Behavior*, 17(4):73-74.

**Editor-in-chief:** Dr Fabio Augusto Barbieri - São Paulo State University (UNESP), Bauru, SP, Brazil.

**Associate editors:** Dr José Angelo Barela - São Paulo State University (UNESP), Rio Claro, SP, Brazil; Dr Natalia Madalena Rinaldi - Federal University of Espírito Santo (UFES), Vitória, ES, Brazil; Dr Renato de Moraes – University of São Paulo (USP), Ribeirão Preto, SP, Brazil.

**Section editor (Infographic):** Dr Renato de Moraes – University of São Paulo (USP), Ribeirão Preto, SP, Brazil.

**Copyright:**© 2023 Tamplain and Ferracioli-Gama and BJMB. This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives 4.0 International License which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

**Funding:** This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

**Competing interests:** The authors have declared that no competing interests exist.

**DOI:** <https://doi.org/10.20338/bjmb.v17i4.349>